VIRGINIA LITERARY MUSEUM

AND

JOURNAL OF BELLES LETTRES, ARTS, &c.

Published every Wednesday.—Terms, five dollars per annum, to be paid in advance.

"POSCENTES VARIO MULTUM DIVERSA PALATO."—Hor. Lib. ii. Ep. 2.

No. 47.—VOL. 1. UNIVERSITY OF VIRGINIA. MAY, 5, 1830.

PAR OF EXCHANGE.

We were much pleased with the report lately made in the Senate of the U. S. on the subject of an uniform national currency, by Gen. Smith, chairman of the committee of Finance. We entirely coincide in the general principles of the report, as to the soundness of the present currency—the beneficial agency of the bank of the U. S. —and the insuperable objections to a paper money to be issued by the Government. But from one particular in this report, not affecting its principal views, we are compelled to dissent. It states the real exchange with England to be at this time more than one per cent *below* par; whilst it appears to us, according to the facts stated in the report itself, to be above par—(we mean, with the committee, the *real* not the *nominal* par,) as we have more than once assumed it to be in the course of our occasional speculations; and we will now state the grounds upon which we have ventured the assertion.

The real par of exchange, we consider to be the rate at which exchange is, when the same quantity of pure gold or silver, which has been given for a bill of exchange in one country, will be received for it in another—for it is the *crucible*, as the committee justly remark, which determines the real value of different coins, and not their *denominations*. Thus, if for a bill of £100 sterling, one has given precisely as many ounces of pure gold or silver in the United States, as will be paid him in discharge of it in England, exchange is then at par, between the two countries; if a greater number of ounces have been given, it will be above par, and if a less number, below it.

This mode of making the comparison is at once the simplest and the most safe from error, for by confining our attention to the quantity of pure metal, we avoid the several embarrassments arising from the different denominations of money in different countries—from the varying portions of alloy in different coins and coinages—and from the irregular depreciation of coins caused by clipping, wearing &c,—all of which must be taken into account in comparing the current metallic money of one country with that of another. It is therefore the mode adopted by the most approved writers for ascertaining the real state of exchange.

Let us now apply the rule to the exchange between the United States and England, and for this purpose, suppose a bill of £100 sterling drawn in Virginia on London. If the bill be there estimated in Spanish dollars, and they are worth only 49½ pence, as the committee state, it will be worth in London 484.85 dollars, containing 179,831 grains of fine, or pure silver, according to English assays, and yet more by the estimates at our mint. If it be estimated in gold, it will be equivalent to 100 sovereigns, containing 11,300 grains of fine gold. Regarding, then, the value of the bill in Spanish dollars, the sum of 484.85 dollars, equal to £145.9.1 Virginia currency, will be the real par, which is nine per cent above the nominal par, (£133. 6.8) arising from our arbitrarily estimating dollars at four shillings and sixpence sterling. And if this is more than the price at which sterling bills at sight are now selling (though we believe it is very near the market price,) the committee are right in saying that exchange is below par, provided we limit the comparison to silver.

But let us see how it will be, if we extend it to gold. An American eagle, rated by law at ten dollars, contains 247½ grains

of pure gold, according to our mint regulations, and 246 grains according to assays of the English mint. We will therefore suppose them to average 246¾ grains. In that case 45.795 eagles will contain 11,300 grains of pure gold, which we have seen to be the quantity contained in 100 English sovereigns, or £100 sterling. But these eagles, at ten dollars each, are equal only to 457.95 dollars, or £137.7.8 Virginia currency, which would reduce the real par to 3 per cent (instead of 9,) above the nominal; thus making the cost of the bill 36.90 dollars less, and the par of exchange 6 per cent. lower when estimated in gold than in silver.

This difference arises from Congress having fixed the value of gold to that of silver at 15 for 1, while in the commercial market of London, as well as of other parts of Europe, it is almost 16 to 1 (15.93 to 1) and thereby rating silver higher, and gold lower here than they are in Europe, by about 6 per cent. Supposing the law effectual, as the same quantity of silver would be the exponent of a greater value in the United States than it is in England, because it would exchange here for more gold, and the same quantity of gold would be the exponent of less value, as it would exchange here for less silver, it would follow that when a bill of exchange drawn here on England, was paid in silver, a greater value would be received for it than it cost, and *vice versa*, when paid in gold a less value would be received. If the gain in one case, or the loss in the other, (the half in each case being 3 per cent) be divided between the two countries,—it would shew the real par to be only 6 per cent. and not 9, above the nominal par, and consequently the par value of a sterling bill of £100 in this country to be $471.40 or £141.8.4½ Virginia currency.

In the preceding remarks we have considered the value of gold to be as it is fixed by the act of Congress. But while the enacted law has undertaken to say that pure gold shall be worth precisely fifteen times as much as its weight in pure silver, the paramount laws of trade have said otherwise; and American gold, as well as all other, now commands a premium in the market of from 3½ to 4 per cent. according to late price-currents. They thus partially correct the error of the legislature, by raising the value of gold, and lowering that of silver, so as to make an eagle worth from 35 to 40 cents more than it is estimated by law. Estimating eagles then at 37½ cents premium (the mean between 3½ and 4 per cent.) the price here of the gold contained in £100 sterling, (11,300 grains of fine gold, or 45.795 eagles) would be raised to 475.12 dollars, or nearly 7 per cent above the nominal par. The medium between this and the par of silver (9 per cent.) would be something less than 8 per cent, which allowing one per cent for the difference between bills at sight and at 60 days, would make the present rate of exchange from 1 to 1½ per cent *above* par.

We may come to a similar result another way. The committee, by way of proving that exchange with England is really below par, say that "to produce one hundred times four and sixpence, it would be necessary to send to England, not 100 dollars but 109.6¼ Spanish dollars, or 109.25 of the United States dollars. *If to this be added the expenses and charges of sending the money and converting it into English gold*, it will cost 111; so that 111 is, at this moment, the real par of exchange." And this, they correctly say is more than one per cent above the market price of bills at sight.

But let us suppose the same value sent in gold, instead of dollars. One hundred times four and sixpence is £22. 10. or twenty-two sovereigns and a half, which contain 2542½ grains of fine gold. Now this quantity in the United States is equivalent only to 102.73, rating eagles at ten dollars each, and 24¾ grains of fine gold at a dollar. Add however 3¾ per cent for the excess of the market price above the legal price, and it would give 106.88 dollars, as the cost in the United States of £22. 10. sterling, instead of $111, including the expense of transportation or $109.6½ without them. Or to take a yet shorter course, as English sovereigns can be bought in New York at 4.75 dollars each, twenty two and a half would just cost 106.88.

It will be perceived that in computing the real par of exchange, we do not take the cost of transporting the metals into the estimate, because they are excluded by the definition of the term according to the

best authorities,* and because to include them would produce a confusion in language, and even a contradiction. Thus it might then happen that exchange between two countries would be below par in both, or in favor and against the same country at the same time; and again, if exchange was not said to be above par until it exceeded the value of the coin and the cost of transporting it, then it never could be above par, as no one would give more for a bill than it would cost him to send the money. But conceding the mode of computation adopted by the committee to be correct, and adding the two per cent. for the expense of transmitting the gold, as they have done in the case of dollars, it would increase the cost of the £22. 10. sterling to $108.52, which is something less than one per cent less than would be given for sterling bills at sight.

Upon the whole it would appear to us unquestionable that exchange between this country and England is now, as it has long been, above par, and the excess will vary from something less than one per cent to about three per cent, according as we consider silver or gold as the standard metal, or take the medium between them.

We have bestowed more attention on this error of the committee, not merely because it was in opposition to some of our former views, but because as it would afford *prima facie* evidence that we bought less of England than we sold to her, it would furnish an argument of some plausibility that the reduced price of some of our staples, of cotton especially, has been partly owing to that circumstance. The actual state of exchange, as we understand it to be, deprives that argument of all shew of support. Q

* The value of coin being the quantity of fine metal contained in it, exchange is said to be at par when between one place and another there is reciprocally paid and received, by means of bills of exchange, equal quantities of fine metal. Storch's Pol. Econ.

ORIGIN OF THE EXPRESSION "OLD NICK" &c.

Messrs. Editors,

In a recent number of the *National Gazette*, the following is given as the origin of a well known expression.

"As cunning as old Nic and as wicked as old Nic were originally meant of Nicholas Machiavelli and came afterwards to be perverted to the devil.—*Dr. Cocchi of Florence.*"

It strikes me that I have somewhere seen a much more probable origin than this assigned to the expression. Is the above derivation orthodox?

Fredericksburg. INDAGATOR.

The *national* origen of the term "old nick" &c. given by *Dr. Cocchi* is certainly not satisfactory. The assigned origin to which our correspondent probably refers is we have no doubt the true one. Almost all our superstitious notions and observances are derived from Scandinavia, which may be considered the hotbed of mythology. Scotland, in early times, had frequent communication with the Norwegians and Danes, and is hence filled with Scandinavian superstitions. In the Scandinavian Hagiology the supreme god Odin or Woden—from whom the third day of the week is called—*Wodenstag, Wodensday, Wednesday*, assumes the name NICKER, NIKAR or HNICKAR when he acts as the destructive or evil principle, and from these terms the expression NICK as applied to the evil one has doubtless been derived. In this character Odin is said to inhabit the lakes and rivers of Scandinavia where he raises sudden storms and tempests and leads men into destruction.

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CANALS OF THE ANTIENTS.

(*Continued from page* 718.)

e. *Canal of Trajan or Hadrian.*

This was made like the canal of the kings, or perhaps it was the same canal which Trajan or Hadrian caused to be cleansed and restored. The geographer Ptolemæus lived in the time of Trajan, who ascended the throne in the year A.D. 98 and of Hadrian, who began his reign A.D. 117. He is the only writer of antiquity, who refers to this canal (*Geogr.* lib. 4, c. 5.) and he calls it the River of Trajanus. Τραιανος ποταμος. He makes no mention of the canal of the kings, which, doubtless, no longer existed, at least in a great part of its length. Oberlin remarks, that this work might also be attributed to Hadrian, who lived sometime in Egypt: for the Arabs still call that which is near Cairo, and receives the waters of the Nile in the time of the inundation—the canal of Hadrian. We

are unacquainted with the breadth or depth of the canal of Trajan. M. Le Blond presumes, that to avoid the inconveniences of the other canal, it was made less wide and deep, so as to admit merely the navigation of small vessels, fit for the conveyance of merchandise and provisions. In making this new canal begin from the river Nile, above the Delta, near Babylon, which was 25 leagues above Phacusa, advantages were obtained which that of the kings did not possess: by means of a dyke, formed in the bank of the Nile, with apertures proportioned to the quantity of water necessary for the navigation, it could be rendered navigable at all seasons, without causing in the waters of the river, in its common bed or in its branches, any diminution, injurious to the inhabitants of Lower Egypt. To carry it to Heroopolis, advantage was taken of a part of the canal of the kings, by making it descend 18 or 19 leagues in a direct line below Babylon and about 16 below Heroopolis, in the salt marshes, through which the old canal had passed. The sand was cleansed away, which had accumulated in the remainder of its length till near the termination in the neighbourhood of Arsinoe.

Ptolemæus, who makes the canal terminate at Heroopolis, says that it was near Arsinoe, and Strabo, speaking of the same town of Arsinoe, where the canal of the kings terminated, places it near Heroopolis. Some difficulty has originated in fixing upon the relative situation of those two places, and especially in the precise seat of Heroopolis. D'Anville, on conjectures drawn from Josephus and the Itinerary of Antoninus, places it at *Pithom*, which is mentioned in the Scriptures near the bitter lakes, 36 miles from the Red Sea, and from Arsinoe or Cleopatris, 40 miles from Babylon on the Nile in a right line, and 25 miles south of Phacusa: here, at Heroopolis he makes the canal of Trajan enter the canal of the kings, so that between this town and the Red Sea the canals formed but one.—There is still a good deal of obscurity about the separate course of the different old canals of Egypt: especially as, at present, there are scarcely any vestiges of this antient communication between the two seas as the commerce between Egypt and the Red Sea is now carried on by land. Omar, however, having conquered Persia, Syria, and Egypt about the year 640, and, wishing to send corn from Egypt to Medina where there was a famine, his General, Amri, dug a canal from the Nile to the Red Sea, at the port of *Colzume* the Clysma of the Antients. (Elmacin, *Hist. des Sarrasins*, Eb. I. c. 3.) Vestiges of this seem to be referred to by Pococke, who speaks of a canal in the valley, *Derb—Towerick*, between the mountains *Attaka* and *Gewobee*. D'Anville calls this valley *Tiheh* and the mountains *Eutaca* and *Kuaib*: the authors of the Universal History think it was the canal of Hadrian, which Amri repaired.

The inviting project of forming a communication between the two seas has attracted the attention of many of the Turkish governors of modern times: but it has never been accomplished. The present energetic Viceroy of Egypt, Mohammed Ali, has actually set about the opening of some of the old canals and the digging of new ones; amongst these the canal of *Mahmoudiah* is particularly deserving of notice: this connects the harbour of Alexandria with the Nile at Fouah: and by it the whole produce of Egypt can be brought without danger or interruption to the port of shipment. In the winter of 1817, when a scarcity of grain prevailed all over Europe, ships flocked to Egypt where there was abundance: but owing to the bar at the mouth of the Nile near Rosetta, and the tempestuous weather along the coast, none of it could be conveyed in time to the vessels that were waiting at Alexandria, to the number of 300 sail, some of which ultimately departed with half cargoes and others went away in ballast: thus the losses became incalculable and the disputes endless. The advantages of a navigable canal were now depicted to the Pasha who accordingly set about the

stupendous undertaking. All the labouring classes of Lower Egypt were put in requisition and a month's pay advanced to them to provide biscuit and provisions. To each village and district was marked out the work allotted to it. The Arabs were marched down in thousands and tens of thousands, under their respective chiefs, along the line of the intended canal, and it is asserted that the number employed at one time actually exceeded 250,000 men! In about six weeks the whole excavation was completed and the people returned home to their respective occupations; but in the autumn, a few thousands were called upon to face parts with masonry, and render the whole navigable for vessels of considerable burthen. This work is about 48 miles in length, 90 feet in breadth, and from 15 to 18 feet in depth. It was opened with great pomp on the 7th. of December 1819.

b. *Canal of Upper Egypt.*

Besides the canals already mentioned, there were others in Egypt, which the dryness of the soil and increased facility of transportation had caused to be dug by that industrious people. One of the largest was that of Lycus, or the canal *of Abouhomar* in Upper Egypt: this canal was from 25 to 30 paces wide. It still preserves marks of very high antiquity. Strabo speaks of it in his geography (Lib. xvii. p. 803). In many parts of its bed, water is found the whole year. This canal issues from the Nile to the north of Diospolis parva—now *Hou*, washes the walls of Abydus—now *Araba*, passes near Lycopolis, now *Siouth* and ends in the Basin of the Sultan, near *Manfelouth*; near the commencement of the celebrated *canal of Joseph*. Sicard detected its course, but the Abbé Brottier considers it misplaced in the map of D'Anville.

3. CANALS OF EUROPE.

Canal of the Chersonesus Taurica (Crimea.)

Many designs were entertained by different individuals to unite the Caspian with the Black Sea. It will be obvious that such a junction would have been of the utmost importance to the commerce of the Greeks, as in this manner by an easy route the riches of India could have been transported to their shores. *Seleucus Nicator* had conceived this design when he was assassinated by *Ptolemæus Ceraunus*, and *Selim* the second had contemplated to join the Araxes with some river of Colchis. We are unacquainted, however, with the means which were adopted or whether any were adopted for carrying those designs into execution. Pliny informs us that in the Chersonesus Taurica there was a canal but where excavated or for what purpose is not clear. Inspection of the map will exhibit that the channel between the Palus Mæotis and the Black Sea is very tortuous and consequently it is not improbable that a canal was cut across some part of it for the purpose of shortening the navigation, but the details afforded by the antients leave us in darkness regarding its true objects or locality.

Canal of Mount Athos. (Monte Santo.)

This is the celebrated canal said to have been executed by Xerxes, partly from ostentation, to exhibit his power to the Greeks and partly for the purpose of transporting his vessels to the other side of the Peninsula, without exposing them to the dangers of a navigation round the promontory.

The fact of such a canal having been cut, to separate Mount Athos from the continent, rests on the authority of the old Historian, Herodotus, to whose great accuracy modern investigations have borne the most ample testimony. The canal began at Sana, at the southern extremity of the isthmus which, according to Herodotus, was there twelve stadia, or a mile and a half broad. According to Pliny it was fifteen hundred paces long and Herodotus asserts it was sufficiently broad to allow two triremi to pass.

As the nature of the soil was unfavorable to such an enterprize and the two portions of the mountain reunited in the lapse of time, so as to leave no traces of the canal, it has been doubted whether the whole narration be not a fable. It is difficult, however, to conceive how many colossal undertakings could have been executed in antiquity, undertakings which leave the efforts of modern times at an incomparable distance, and which owed their execution to the unlimited despotism and degrading servitude of the period.

Canal of Boeotia.

The canals which existed ketween the Lake Copais, so celebrated for its fish and particularly for its eels in antiquity, are said to have been of a most stupendous character. Wheeler asserts that they should be reckoned as some of the greatest wonders of the world, several leagues of excavation through the solid rock being necessary to form a communication between the lake and the Euboean Sea. These canals were made for the purpose of drawing the water from the lake.

Canal of Corinth.

At an early period of Grecian History Corinth was celebrated for its extensive commerce. For this it was, doubtless, greatly indebted to its advantageous situation. Placed at the very entrance of the Peloponnesus it was of course the thorough-fare for travellers passing from the southern to the northern parts of Greece and vice versa; added to which advantages its two ports—Cenchreæ on the Ægean Sea and Lechæum on the Ionian—made it the common mart not only for all Greece but for Europe and Asia. The isthmus between the Sinus Corinthiacus and the Sinus Saronicus is not more than two leagues across. It was consequently a matter of the utmost importance to make a canal communication between the two, in order to spare the long navigation round the Peloponnesus, a distance of not less than one hundred and sixty leagues. The dangerous passage round the promontory *Malea*, to which Virgil and Strabo have alluded, would thus, also, be avoided. The advantages to be obtained from such an enterprize could not fail to attract the attention of rulers desirous of the prosperity of the country; and accordingly numerous attempts were made, but, for some cause or other, without success; partly no doubt owing to the elevation of the country. The first who indulged the project was *Periander*, 576 B.C. according to *Diogenes Laertius*. Three centuries afterwards *Demetrius Poliorcetes* undertook it but the obstacles were so numerous that he abandoned the design. *Julius Cæsar*, according to *Suetonius* indulged the same project, as well as Caligula and Nero, but although the latter made considerable progress in the excavations he ultimately abandoned it. Lastly *Herodes Atticus* was desirous of undertaking it, but he rested satisfied with his desire, as he does not seem to have entered upon the execution.

Near Corinth is a small village, called *Hexmillia*, from the isthmus being there six miles broad, and Wheeler says he saw there traces of the attempted canal.

Σ

ON THE PRESSURE AND FLOWING OF SAND.

We have been much interested by the following account, taken from a late number of the *Bibliotheque Universelle*, of a series of experiments made by *M. Huber Burnand*, of Geneva. The flowing of the sand in an hour-glass, is very similar to that of a stream of water through an aperture, and might lead us to suppose a closer analogy in the two cases, than is really found to exist. One point of difference may be observed, indeed, even in this familiar instrument;—it is, that the velocity with which the sand flows is sensibly uniform, notwithstanding the constant change in the height of the incumbent mass. In liquids, on the contrary, it is well known, that the velo-

city of the stream depends upon the head under which it issues, and therefore, as the vessel empties itself, must continually vary.

All the phenomena mentioned by M. Huber, may be explained by supposing that the sand, in the vessels employed, forms itself into arches or vaults, of which the sides of the vessel are the abutments. Hence the pressure on the bottom will be due merely to that portion of the sand which is under the lowest arch capable of self-support. Hence, too, the pressure on any part of the sides of the vessel, will be independent of its depth below the surface.

We have not seen a description of the instrument alluded to in the first paragraph of the following extracts. It is easy to conceive, how such an instrument might be made to indicate the mean force of the wind, when its duration is known; but we are puzzled to imagine any means by which it could furnish *both* these data. It is evident that M. Huber's Anemometer might be so arranged as to point out the relative quantities of the wind that blow from the different quarters of the compass, and that it may thus supply a most important desideratum in meteorology.

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"A year or two since, M. Huber Burnand described an Anemometer to the Philosophical Society of Geneva, in which the force and duration of the wind were ascertained by the quantity of sand which escaped from an aperture varying in its size with the wind. In consequence of a conversation relative to the manner in which sand would flow, and how far it would accord with liquids in this respect, M. Huber undertook a set of experiments which have given some very curious and interesting results; these we shall endeavour very briefly to abstract.

To obtain a regular fall of sand, it must be well sifted, but must not be too fine. That which will just pass through a sieve containing 38 wires per inch in one direction, and 45.6 in the other, flows with great facility; but the aperture must never be less than .079 of an inch in diameter. The sand, in the experiments, was generally contained in wooden boxes, closed at the bottom by four moveable plates, so that the aperture could be widened or lengthened at pleasure, the edges of these plates being bevelled on the exterior. The sand which had passed the aperture was estimated both by weight and measure.

The quantity of sand which flows in a given time through a given aperture is the same, whatever be the volume, the weight, or the height, of the sand in the box above. The height was sometimes increased tenfold without change.

When the aperture was from .078 to .118 of an inch in width, the quantity of sand which passed was always directly as the length of the aperture; but the least increase in the width occasioned an increased quantity greater than in the direct ratio of the areas of the apertures. The first part of this result may be useful in the construction of numerous instruments.

Sand passing out by lateral apertures made in the *surface* of the boxes flowed with equal velocity, whatever the height of the column within; but if these lateral apertures were made in the form of horizontal holes, and the diameters were not nearly equal to the length, not a grain of sand would pass.

Sand being poured into one leg of an inverted syphon, did not mount in the other. It extended but a very little way into the horizontal part.

Whatever pressure be given to the upper surface of the sand, it exerts no influence on the issue below. From a quarter to half a hundred weight produced no difference.

A rod placed upright in the sand, directly over the aperture, descended without any inclination, in a very regular and uniform manner. When placed between the centre of movement and the border of the box, it also moved regularly, but gradually became inclined.

M. Huber remarks that there is, perhaps, no other natural force on the earth which produces by itself a perfectly uniform movement, and which is not altered either by gravitation or friction, or the resistance of the air; for the height has no influence; friction, in place of being an obstacle, is the regulating cause; and the resistance of the air, within the column, must be so feeble as to be altogether insensible as a disturbing force.

Single grains of sand placed upon a flat surface did not roll until the inclination of the surface was at least 30°, sometimes almost 40°. The angle formed by a heap of flowing sand is almost always between 30° and 33°; very rarely as much as 35°. Small shot and peas produced the same general effect as those described with sand.

An egg was put at the bottom of a box, and covered a few inches deep in sand: a weight of 60lb. or more, placed over it, did not injure or affect the egg. The same result took place when the sand at the bottom of the box was put in motion by opening the aperture. Hence it is evident that the sides of the vessel support the pressure almost entirely; and also that the egg is protected from the irregular action of the pressure by the sand, to the same degree, though not in the same manner, as if in a liquid.

Other experiments fully proved that the pressure of the sand was princpally sustained by the sides of the vessel. An inverted syphon had a little mercury poured in until both limbs were partly filled, and then sand was poured in on the one side upon the mercury; no elevation of the mercury in the other leg took place. Pressure was added to the weight of sand, still the mercury remained unmoved. More delicate experiments, by means of balances, showed the same effect.

A simple paper tube was rolled up; a plug fitting very loosely into the end, but not so that sand could pass it, was floated by a cork or otherwise, on water, with such buoyancy as to be able to sustain the little cone of sand that its circular surface could receive, and then the tube was held in the hand over it. On pouring sand in, the tube might be filled without displacing the floating plug below, although there was weight enough to sink plug and tube, and every thing else, if the hand had been taken away. The sides of the tube, in fact, supported the sand.

From these, and other experiments, it was concluded that it would be exceedingly difficult to *push* sand out of a tube; and upon trial, this was found impossible; the sides of the tube gave way first. Even when inclined 20° downwards, it could not be done. It is easy, therefore, to see how, in the blasting of rocks, sand is as effectual for closing the hole as a plug, the most compact driving, or any thing else.

A very simple mode of showing the most striking of these effects, is, to prepare an open tin tube, an inch in diameter, and of any length; to press a piece of thin paper against the end of it with the hand; to moisten the edges of the paper; and, replacing it, to let it adhere simply by such moisture; then placing the tube upright, with the end upon the table, to fill it with sand, and afterwards gradually to raise it. Whatever the weight of the tube and its contents, it may be carried any where in that position, although the paper bottom adheres but very slightly."

MAJOR RENNEL.

This celebrated geographer died in London on the 29th. ultimo in the 88th year of his age. He was born at Chudleigh in Devonshire of a respectable family, in the year 1742. After having obtained the ordinary scholastic knowledge which the neighbourhood afforded, at the age of 15 he entered the naval service as a midshipman and signalized himself by his intrepidity in India, particularly at the siege of Pondicherry. By the advice of a friend, who had some influence in the India-house, he left the naval service in 1766, and entered into the military service of the company as officer of engineers. His first production was a *Chart of the bank and Current of Cape Lagullas*, for which he was appointed surveyor general in Bengal: soon after this he published his *Atlas of Bengal*, which was succeded by an account of the Ganges and Burramputer, published in the *Philosophical Transactions*. This last production gained him admission into the Royal Society. About the year 1782, he returned to Europe and published his celebrated "*Memoir of a map of Hindostan.*" When the *Asiatic Society* was founded he took the warmest interest therein, and made several valuable contributions, anonymously however, to their journals. In 1798 he assisted Mungo Park in the publication of his journey in Aftica; and undertook, at the desire of the African association, several works for the improvement of the geography of that part of the world. The great work of *Vincent* on the voyage of Nearchus, as well as that on the Periplus, is indebted to him

for many valuable observations. His own works entitled "*The geographical system of Herodotus explained*" and "*Observations on the topography of the plain of Troy*" have obtained him much deserved celebrity.

The following list of his productions, all of which are distinguished for uncommon accuracy and research, will exhibit the advantage which science and literature have derived from his labours.

1. *Chart of the bank and current of Cape Lagullas*, 1778.

2. *A Bengal Atlas; containing Maps of the Theatre of War and commerce on that side of Hindostan; complied from the original surveys, with tables of routes and distances from Calcutta, through the principal inland navigations.* 1781. fol.

3. *Memoir of a map of Hindostan or the Mogul Empire: with an introduction illustrative of the geography and present division of that country, and a map of the country situated between the head of the Indus and the Caspian Sea.* London 1783. 4to. To the third edition, published in 1793 is added a second supplementary map, containing the new geography of the Peninsula of India and an explanatory memoir.

4. *Memoir of the Geography of Africa, with an adjoined map*, 1790. 4to

5. *The marches of the British Armies in the Peninsula of India, during the campaign of* 1790, —1. *illustrated and explained by a map and other plates*, London 1792, 8vo.

6. *Memoir of a map of the Peninsula of India from the latest authorities, exhibiting its natural and political divisions &c.* London 1793. 4to. with a large folio map.

7. *Observations on a current that often prevails to the Westward of Scilley and endangers the safety of ships that approach the British Channel.* London 1793. 8vo.

8. *Elucidations of the African Geography*, 1798. 4to.

9. *Second, third and fourth memoirs on the geography of Africa*, 1798. 4to.

10. *Proceedings of the Assoaiation for promoting the discovery of the interior parts of Africa: containing an abstract of Mr. Park's account of his travels and discoveries, abridged from his own minutes, by Bryan Edwards Esq. Also geographical illustrations of Mr. Park's journey and of North America at large*, London 1798. 4to.

11. *The geographical system of Herodotus examined and explained by a comparison with those of other antient authors and with modern geography, including dissertations on the itinerary stade of the Greeks, the expedition of Darius Hystaspes to Scythia, the position and remains of antient Babylon—the alluvions of the Nile, the canal of Suez, the oasis and temple of Jupiter Ammon, the antient circumnavigation of Africa and other subjects of history and geography;* with 11 maps, London, 1800, 4to.

12. *Observations on the Topography of the plain of Troy*, 1814. 4to.

13. *An Account of the Ganges—Burrampooter* Philos. Transactions, 1781.

14. *On the rate of travelling as performed by Camels and its application, as a scale, to the purposes of Geography*, Ibid. 1791.

15. *On the effect of westerly winds in raising the level of the British Channel.* Ibid. 1809.

16. *Observations on the physical and political geography of North America—in Nicholson's Journal*, Vol. 2.

JEFFERSONIANA, No. 4.

CHRONOLOGY OF INVENTIONS.

860. Astronomy seems first to have been cultivated in India. Callisthenes sent from Babylon to the preceptor of Alexander 1903 years of celestial observations. These went back precisely to 2234 years before the birth of Christ, which is higher than those of the Chinese 14. Volt. 34. 215. They made the earth and other planets revolve round the sun in different orbits, ib. 35. they counted in their own history 470,000 years, ib. They, and not the Ægyptians invented the Zodiac, ib. 30. The solar quadrant, and reflection of light by the moon 'tradidit Ægyptis Babylon, Ægyptus Achivis' ib. 40. The signs of the seven planets and the seven metals are yet in almost the whole earth, the same which the Indians invented, ib. 62. They from time immemorial divided the sun's annual course into twelve parts. Their weeks were always of seven days and their days bore the names of the seven planets. It is difficult to say whether the Indians or Chinese taught the one the other; but the sciences are certainly more antient with the Indians than Ægyptians, ib. 241. The Chinese divided the course of the sun into $365\frac{1}{4}$ parts. They have from time immemorial divided the month into weeks of seven days. The Indians did so also,

and the Chaldeans conformed to it, from whom it passed to the Jews. It was not adopted by the Greeks, ib. 223. The Chinese history goes back 4152 years, ascertaining their dates by astronomical observations, besides several preceding ages to which dates are not precisely fixed, lib. 197. The elements of *Geometry* were known to the Chinese several ages before Euclid reduced them for the Greeks. The famous demonstration of the properties of the right angled triangle, ascribed in the West to Pythagoras, was well known to them above 3960 years ago, ib. 224. What was so well known to the Chinese would easily pass to the Indians, among whom Pythagoras, who studied under their Gymnosophists, probably learnt it, ib. 236. The progressive motion of *Light* was discovered by Roemer, its analysis by Sir Isaac Newton. A *transit* of Venus was first seen by Horrox. Drebbel, a Dutch peasant in the beginning of the 17th. century had the first idea of a *thermometer*. Encyclopedie. thermometer. Torricellius introduced the *barometer*. Michael Servetus, a Spaniard discovered the circulation of the blood long before Harvey,* 16 Volt. 161. The Indians wrote in hieroglyphics many ages before the Ægyptians, 14 Volt. 36. The Phœnicians invented the *alphabet* in 24 letters, communicated it to the Carthaginians, and these to the Greeks. They were different from the Ægyptian letters, ib. 48. 91. *Printing* was invented by the Chinese about 2000 years ago. They cut the characters in blocks of wood as Guttenburg did first at Mayence in the 15th century, ib. 223. The Indians invented the *cyphers* we use, ib. 62. 241. and from them the Arabians borrowed them, ib. 62. The Chaldeans knew of the *compass*, but did not apply it to navigation, ib. 224. The property of the *magnet* was discovered about the end of the 13th century by Flavio Gioia, a citizen of Amalfi in the kingdom of Naples: he invented the compass, and marked the needle with a flower de luce, that being in the arms of the king of Naples who was of the house of France,—16 Volt. 224. The Chinese invented *gunpowder*, they used it only for artificial fireworks, 14 Volt. 223:—cette invention des Chinois fut-elle apportée in Europe par les Arabes qui trafiquaient sur les mers Arabes? il n'y a pas d'apparence. C'est un Benedictin Allemand, nommé Berthold Schwartz qui trouva ce secret fatal. Il y avait longtems qu'on y touchait. Un autre Benedictin Anglais, Roger Bacon, avait longtems auparavant parlé des grands explosions que le saltpetre enfermé pouvait produire. Il est bien etrange que cet usage de la poudre, ayant du changer absolument l'art de la guerre, on ne voye point l'epoque de ce changement, 15 Volt. 262. Gunpowder was discovered in 1380 by Bertholde Schwartz, a monk of the order of St. Francis of Fribourg in Brisgau. He showed the use of it to the Venetians who were then at war with the Genoese —Polydor. Virg. de invent. rer. l. 2. c. 11. *Artillery* was not used at the siege of places till the time of Charles V. of France, 15 Volt. 282. The English are said to have won the battle of Creci by having some small pieces of cannon. The use of artillery had commenced about ten or twelve years before, ib. The Portuguese taught the Chinese the use of artillery, 14 Volt. 223. In the wars of Flanders under Philip II. an Italian engineer used *bombs* for the first time—Notes on the Henriade b. 6. Bernard Renaud invented *bombketches* for the purpose of bombarding Algiers, 18. Volt. 349. Les Turcs au siege de Candie, firent, pour la priemiere fois, des lignes paralleles dans les tranchées. C'est d'eux que nous avons appris cet usage; mais ils ne la tinrent que d'un ingenieur Italien, 18. Volt. 296—Louis XIV. It was the duke of York, afterwards Jac. 2. who invented the art of giving orders at sea by different motions of the flag, 18. Volt. 316 Louis XIV. But this art has been so much improved by Mons. de Pavilon, a French gentleman, that his has almost the merit of a new invention. He takes ten flags of different colours, he makes each

* Servetus had certainly a notion of the circulation and so had Cæsalpinus and others, but the demonstration of the circulation justly belongs to Harvey.

colour represent a cypher. Thus for instance white is 0, red is 1, blue is 2, green 3, &c. To represent 20 in this case he holds up blue and white on two staffs. To represent 321, he holds up green, blue, and red on three different staffs, &c. Thus with two staffs he can give 99 signals; with three 999; with four 9999 &c. He has a book of signals, every one of which is numbered in order; a copy of this being in the hands of every master of a vessel they have only to turn to that when they see a number represented by signal and they find the corresponding order. If one of these books be taken by the enemy, he shifts the whole system, by giving notice to the captains that green shall now represent 0, white 2, blue 3, &c. (and so toties quoties.) The name *bayonette* is derived from Bayonne, where they were first made. Notes on the 8th. b. of the Henriade. A just taste in *architecture*, *sculpture*, *painting*, *music*, *poetry*, *eloquence*, the *art of writing*, and even in *philosophy* was first acquired by the Greeks. 14 Volt. 93. Cimmabué sans aucun secours etait comme un nouvel inventeur de la peinture au treizieme siecle. Le Giotto fit des tableaux qu'on voit encore avec plaisir. Brunelleschi commença a reformer l'architecture gothique. Gui d' Arezzo (Guido Aretine) longtemps auparavant avait inventé les nouvelles notes de la musique a la fin de l'onzieme siecle. On fut redevable de toutes ces belles nouveautés aux Toscans. 15 Volt. 302–316. The Indians invented *chess*. 14 Volt. 62. 240. The Chinese have had the use of *clocks* from the highest antiquity. 14 Volt. 223. There were some in Italy in the 13th. century. 15 Volt. 302–316. They first made *silk*, and *paper*, ib. 222. Paper of linen was invented in the beginning of the 14th. century, which was one hundred years before the invention of printing. 15 Volt. 302–316. The Chinese made *glass* 2000 years ago. 14 Volt. 222. The Venetians alone had the secret of making *looking glasses* in the 13th. century. *Spectacles* were invented about the end of the 13th. century, by Alexander Spina. *Windmills* were known in Italy about the same time. They are spoken of by La Flamma in the 14th. century, and are not spoken of before. They were known long before among the Greeks and Arabians. They are mentioned by Arabian poets in the 7th. century. *Chimneys* were not in use in the 13th. century. A fire was made in the middle of the room and a hole to let out the smoke. The best citizens used splinters of wood for light, in the time of Frederic Barbarossa and Frederic II. *Candles* were considered as a luxury in the time of La Flamma. Shirts were made of woollen and not of linen, temp. Fred. Barb. and Fred. II. 15. Volt. 302–315.

TRUE THOUGH TRUANT.

(*Continued from page* 732.)

Oh Love! thou rulest human fate
In ev'ry age and clime,
Exalting some to all that's great,
And plunging some in crime—
From thee, man's purest pleasures flow
From thee, proceeds his bitt'rest woe.—Anon.

Paris. June—1829.

My Dear Sir,

Notwithstanding the sage counsels I wrote you I had given my *protegé*, and the fair promises on his part, he continues to shew his predilection for female society. He passes a good part of his time, when he is not with me, in the back parlour of our landlady, who you must know has quite a pretty daughter, about his own age. Both she and her mother have noticed his preference for their society, and they evidently encourage it. "Mons. Philip," says Mad. Crampon to me, "est très aimable, et bien fait—Ma. foi! il est Philip le bel." The last time I saw Albert in close conversation with Mademoiselle, he looked disconcerted, as if he knew what was passing in my mind, and he thought proper to excuse himself indirectly, by saying that he was endeavouring to perfect himself in the French. I see that the girl never has her eyes off of him, and seems restless and uneasy when he is not present —Iheartily wish we were gone—and yet more, that this youth, who is capable of making so distinguished a figure, but who has so thorny a path to tread, was once more under his paternal roof. Do my dear C—— exert yourself to find out his friends that

they may take measures to get him home again.

After my lecture to him on the impropriety, not to say guilt, of paying such particular attention to Mad'lle Crampon, he for some days carefully abstained from going into the back parlour. But I have reason to believe that his resolution did not hold long, but that he had occasional interviews with Adelaide while I was out; for returning to my lodgings suddenly one day to get a paper connected with my claims, I saw him in close and very earnest conversation with her. Finding I was not perceived, I stopt awhile in the passage, and at the same moment I saw him embrace her affectionately. He then suddenly left the room, and came upon me before I could make my escape. The scene was embarrassing to all parties, especially to them, as it was plain that they both had been weeping. I went up into my room, and in a little time was followed by Albert. I spoke to him more freely than I had ever done before, and endeavoured to place before him in no very favorable light, his want of firmness—want of generosity—want of a proper sense of right. But before I was done, his air of meekness and patient suffering dispelled all that I had felt of resentment.

After some pause, he said he knew that he was condemned by appearances, but he assured me that he had practised no deception on this young woman—that he had felt a kindness for her in consequence of a striking resemblance she bore to a favorite sister, and that the character of his attentions were fully understood by Adelaide. I hinted to him, that perhaps his actions contradicted his words, and that as they always obtained most credit, he might thus interest this girl's affections without intending it. In conclusion I intimated to him that we must dissolve our parnership, if he persevered in a course so foreign to my notions of right.

I left him to chew the cud of reflection upon this remonstrance, and in the course of the day, I felt it my duty to speak on the subject to Mad. Crampon, both that she might check the growing intimacy, and indulge no false expectations herself. I find her already *au fait* of the whole affair. It was manifest that she had been disappointed. She laid great stress upon Albert's very particular attentions to her daughter—spoke of the respectability of her family—said, her husband had been a *capitaine d' infanterie* under Napoleon, and that a cousin of hers had been one of his prefects. In speaking of Albert, there was plainly a struggle between her fear of giving offence and her vexation, but she went so far as to say that "Mons. Philip est un peu volage, je crois." I tried to smooth over the matter as well as I could, but was obliged to acknowledge to myself that there was much justice in the worthy lady's complaints of Albert, though she herself had also contributed to her own disappointment.

Poor Adelaide did not appear at breakfast or dinner the next day, and when I met her in the evening, she hardly ventured to raise her long eyelashes to look me in the face. I never saw her look so pretty, and had I been twenty years younger I should have fallen in love with her myself.

The discovery has made me hasten my departure, and to do Albert justice he seems as desirous of leaving Paris as I am.

Is it possible that he has in cold blood set about engaging this poor girls affections without feeling any preference himself—and that having affected this gratification of his vanity, he now wishes to try his powers of pleasing on a new theatre? Can such a stripling in years be at once so heartless and designing? It seems improbable—and the supposition is moreover at war with the rest of his conduct. In all other respects he shews himself to be the most considerate, and delicate, and kind hearted being in the world. He is very regular in his religious exercises, and nothing can prevail on him to partake even of the soberest of those amusements which are indulged in here on a Sunday. He is idolized by the servants, and so he was by those of the packet. He thinks of all my little wants and anticipates them. He hears my advice with the most patient submission. He is upon the whole the greatest contradiction I have met with, and I feel more anxious every day, to draw aside the veil of mystery that hangs over his past life, and to know who and what he is.

As I wrote you very fully last week on the state of public affairs here, I shall say nothing on the subject now. In five days we shall set out for Italy, and you will hear from me again when we arrive at

Leghorn. I shall hope then to get an answer to my last letter. Believe me to be ever and sincerely yours.

P. D. R——.

Leghorn, July 10th. 1830.

Before I say a word to you, my dear C— on the subject of business, let me tell you that Albert's mystery is cleared up, and that I now know who and what he is. So also shall you. But the story is rather a long one. You have no doubt heard of, if you have not known, Mr. J. P—— a rich merchant of Boston. Not long since he had a lovely daughter who was the object of general admiration. Among the young men in his counting house was one by the name of Latimer, who being remarkably handsome, and the first who paid her particular attention, was preferred by her to all her lovers, and as his character was good, his connexions respectable, and he shewed talents for business, her parents gave their consent to the match, and they were engaged. But some time in the course of the last year Mr. P—— not finding his cash account, as kept by the bank, to agree with his own, discovered, on a further investigation, a forged check among those presented in his name. Now it happened that all his bank business was transacted either by Latimer, or Nathan Knox, his chief clerk, and as the money of the forged check appeared to have been paid for the use of the house, while it was almost certain that the fraud had been perpetrated by one of these young men, it was impossible to determine which was guilty. In point of character they stood equal, except that Knox had the advantage of being more demure in his habits, and of partaking less of public amusements. In vindication of his character, Knox suggested that his papers and Latimer's should be examined; which being immediately consented to by the other, and carried into execution, a forged check of the same description as the first was found in Latimer's secretary. He at first boldly protested his innocence—and insisted on a public trial, but his friends, hearing the circumstances, took another view of the subject. They represented to him how vain would be to resist such a strength of proof, and finally prevailed on him not merely to leave Boston, but the United States. To which course Mr. P. assented in consideration of the relation in which they had lately stood.

But though the lovers were thus severed by circumstances, they were as strongly attached as ever by the ties of affection. Latimer persevered in asserting his innocence, and the beautiful and confiding Agnes believed him. Whilst then she was compelled to resign her lover, it was not without some secret hope that the treachery of which she believed him the victim would be brought to light, and his innocence be made manifest—for when did love in distress ever fail to derive solace from hope? But after this unhappy affair began to blow over, among the new competitors for her favor was Nathan Knox, and as he stood higher than ever in the confidence of Mr. P— after the suspicion to which he had been unjustly exposed, and had some property, his suit was favored by the parents. But the young lady herself conceived a violent aversion to him, not merely because his character had been placed in favorable contrast with that of her lover, but because his addresses strengthened a suspicion, entertained from the first, that he had been the contriver of the plot against Latimer to get him out of the way; and she now recollected many little circumstances which, though not understood at the time, indicated preference for herself and ill will to Latimer.

In the meanwhile he continued to rise in the esteem both of the public and Mr. P—— who finally took him into partnership, and both her parents became very urgent with their daughter to marry him. The poor girl to escape this persecution suddenly disappeared from her father's house, and she took her measures so effectually that no tidings of her could be obtained. It was supposed by some she had gone in pursuit of her lover, and by others that she had made way with herself. It seems however that she proceeded to New York where she became acquainted with your humble servant, and that she is the identical Albert Philips whose singular and incongruous character has been such a puzzle to me.

You will be curious to know how the discovery was made. We were a few nights ago at the theatre—Albert, or Agnes, as I must now call her, had complained of lassitude and the heat of the weather for some days. That night was remarkably sultry. On scrutinizing the pit very closely, as she was wont to do, to

see (as she alleged) if she could discover any Americans, but really in the hope that she might meet with Latimer, she thought she perceived her persecutor Knox, and the agitation and alarm it created, together with the heat of the weather, caused her to faint away. She was immediately taken to the lobby, and in loosing her vest, was discovered to be a woman. Astonished as I was, I endeavoured to prevent the affair becoming public, but it was impossible. It was soon buzzed about the play house, and the next day was the subject of general discourse althrough Leghorn, and told with a thousand different versions.

Poor Agnes, in addition to the distress and mortification of being thus the subject of general conversation, has had her dread of being discovered by Knox increased; for it was really he whom she saw in the play house, and she seems confident he is in pursuit of her. She has accordingly kept close within doors ever since. She is moreover afraid that her original plan will be defeated, of rejoining Latimer for the purpose in the first place of inducing him to return to Boston and there assert his innocence, and then, if he refused, of sharing his fortunes; since it will be impossible for her to travel about the world in her real character, and she seems to revolt at the thought of resuming her late disguise.

She has always seemed very much embarrassed ever since the *denouement*, when we first meet, and blushes like scarlet whenever the subject is mentioned. I know not how she may appear to the ladies, but to me she is far more beautiful in her real, than her borrowed character. She has too the advantage of stature, for though short as a man, she has a very pretty figure as a woman. I pity her from my soul, although I cannot but condemn her imprudent enterprize. Her plans are not yet settled, but I shall spare no pains to induce her to return to her friends. Having ascertained that Knox was here, I have in compliance with Agnes's entreaties, not sought him out, and shall not cultivate his acquaintance, though he yesterday left a card for me. My sympathies for this unfortunate girl have so engrossed me, that I have little time to inform you of my concerns * * * ——

Yours, as ever,
P. D. R——.

London August.—1829.

My Dear Sir,

My last letter from Leghorn informed you that the admired Mr. Albert Philips had proved to be the no less admired Miss Agnes P—— of Boston, and I gave you the history of her disguise, as well as the circumstances which led to its discovery. I was soon made to find that it was one thing to be the escorte of a delicate and accomplished belle, and another to be the travelling guardian of a young gentleman, even though he was a little wayward at times. Poor Agnes was very loath to relinquish her first plan of rejoining Latimer, but she finally yielded to my remonstances, or rather to the inherent difficulties of her scheme, and consented to wend her way back to her paternal roof, with shame on her cheek and disappointment in her heart. I was, however, obliged to promise to intercede with her father to relieve her from the hateful addresses of Nathan Knox, now more an object of aversion than ever, as she considered him the immediate cause of the frustration of her scheme.

It was then arranged that we would, as soon as the business which brought me here was settled, proceed from hence to England, and there embark in the first packet to New York. After this the mind of the poor girl became more tranquil, but she never stirred out except in the evening, when she would sometimes take a ride with me on the *corso*, or a walk on the canal, where we have a fine view of the broad expanse of the Mediterranean, beautifully reflecting a long line of dancing moonbeams. She thus secluded herself not merely to escape the curiosity which her unwelcome celebrity had excited, but to avoid meeting with Knox. Her fears from this source were groundless, as it aftewards appeared.

On calling to return Mr. Knox's visit, I learnt that he was indisposed and could not see company. Not wishing to make myself a party in Agnes's disputes, and uncertain how far her suspicions of him had taken the colour of her feelings, I thought I could do no less than to call again to inquire about his health; and on doing so, I learnt that he had a severe autumnal fever. I expressed a desire to see him, and on the following day, was admitted. I found him in a situation that called for all my sympathy, independent of his being in a land of strangers, so far from our common country.

He appeared to be dangerously ill, and was not provided for, either as to nursing or medical advice. I attempted to remedy the deficiency, and he seemed to feel my little services most gratefully. In about a week after I had seen him, he sent for me one morning at an earlier hour than I was wont to call, and having stated that he was then convinced he should not recover, added that he wished to disburthen his conscience of an act which lay heavy at his heart. He then gave me a succinct detail of his first attchment to Agnes, which was long prior to her engagement with Latimer—of his envy and jealousy of his successful rival—of his vain struggles against his passion,—of its finally suggesting to him the plan of destroying Latimer's character—and of his means of carrying it into execution, which were to draw money from the bank by one forged check, and to carry another into Latimer's secretary, by means of a false key, the day before the discovery. He said that he felt less hesitation in resorting to this stratagem to get rid of his rival, because he was the first who had formed designs upon Agnes, and Latimer, knowing this, had meanly supplanted him—that as to the money which he had pocketed by his artifice, he meant, under some pretext or other, to deduct that much from Agnes's fortune—not doubting that with the aid he should derive from the favor of her parents, he would eventually succeed in making her his wife. Such is the sophistry by which the wicked conceal from themselves the character of their own actions.

He further stated that after Agnes's secret disappearance from her fathers' house, when he saw all his schemes rendered nought at the very moment he thought them near completion, and imagined her in the possession of his rival, his mind underwent tortures beyond endurance or conception. Having vainly endeavoured for some time to find the course of her flight, he at length traced it to New York, by advertising certain jewels as stolen, which she had carried with her, and which he rightly conjectured she had turned into money, to defray her expenses. He then set off in pursuit of her with the consent of her father, and, after great difficulty, had discovered her disguise, and had followed her from New York to Paris, and from Paris to Leghorn.

His plan had been to carry Agnes off by stealth, anticipating oppostion from me, and therefore he had not intended to make his arrival in Leghorn known to us; but the night after he arrived, feeling a stronger desire to go to the theatre, on account of his former hypocritical forbearance in Boston, he had there been unexpectedly recognized by Agnes. It was then necessary to be more secret in his operations, as he supposed we should be on our guard, and his preparations to have her forcibly taken and put on board a vessel, provided for the purpose, were all made at a late hour of the night. It was to this circumstance, in addition to the fatigue of body and anxiety of mind he had undergone in the pursuit, that he attributed his disease, which he could not but regard as a judgment on him. He then consented, with some hesitation, and after he was convinced of its necessity, to sign a written and attested statement of the above facts. And lastly, as the strongest evidence of the sincerity of his contrition, he told us that Latimer was at this moment in London, and under a feigned name was in the employment of an American merchant. He lived two days after this interview. I procured, at his earnest request, the attendance of a protestant minister of the gospel, a missionary from our country on his way to Asia Minor, and it required all his pious efforts to soothe the troubled spirit of the penitent.

All Agnes's ill will to this unhappy being terminated with his life. She wept for his errors and his sufferings, and not only forgave his injuries to herself, but felt a sort of gratitude for his slow reparation of them. I need hardly tell you that we lost no time in sailing for London, and, on arriving there, in finding out Latimer. The happiness felt by the lovers you can better imagine than I can describe. Next week we shall set out for Liverpool, from whence we shall sail in the first packet to New York. It gives me real satisfaction to reflect that I have contributed to the happiness of these young persons, and to restore to her parents and proper station in society, one who though for awhile a *truant* to her filial duties, was in all other respects as *true* to the precepts of religion and virtue as to those of love—I am my dear—affec tionately yours.

P. D. R——,

INVOCATION.

Revolving Time adds yet another year
To the sad twain, which darkly went before;
And glooms it still my soul that parting hour?
As from the column'd cloud on Israel's fear
Broke the red light, that pointed out the road
By which the chosen band
Through the abyss, where erst the sea-wave flow'd,
And through the desert's arid waste,
Till then by foot-step never trac'd,
Came forth of Egypt to the promis'd land,
So on that deep and dark despair
Which of my heart had made its lair
There dawn'd a hope,
Not like the sun's too dazzling blaze,
Which woos at once and blasts the gaze;
But like night's soft and tender orb,
That seems each feeling to absorb;
And it has given me power to cope
With every ill that round me clings;
For now my love has boundless scope,
And to its boundless object springs
Aloft upon expanded wings.
It broods not here, it stoops not there
Nor soars it to yon glitt'ring sphere,
But spurning bound of time and place
Pervades eternity and space;—
The God it seeks is every where.
Our human charities it makes not less,
But cleansing them of earthly stains
It gently chastens, not restrains.
And, as a mother's tenderness
Soothes her weeping babe to rest
So doth thy holy spirit, Lord!
Like oil on troubled waters pour'd
Calm the wild tumults of the breast.
The heart of man is not by power divine
Thus finely touch'd, but into issues fine—
Oh! thou who didst make whole the hopeless blind
And laid creation open to the sight
Of one who, from his birth, had known but night,
Beam thou upon the darkness of my mind!
Give me Oh! Son! with mental eye
To hail "the day-spring from on high,"
"The morn upon the mountains spread,"
That I may live and not be dead.
Quench thou, Oh Lord,! th' unhallow'd fire
Of every low earth born desire:
Keep me aloof from bigot zeal;
For 'tis no fruit of heavenly seed
That bids us crush a bruised reed;
And such is man, e'en in his best estate,
When most, with all he covets most, elate.
Teach me my fellows' woes to feel
And patient bear my own;
Or rather deem them blessings sent
To answer some unknown intent;
In mercy by that hand bestow'd
Which out of evil worketh good;
And to thy mighty throne
Let me in meek submission bow,
For thou no less canst raise the low,
Than, when thou sp'ak'st in thunder from the cloud
Thy voice could awe and terrify the proud.
I own Oh God!—that I have largely err'd;
My trust is in thy never failing word:
Too long my heart with idle passion burn'd;
Turn thou me from it, and I shall be turn'd;
Fan with thy breath this new and holy flame
That I may bless, Oh Lord,! and glorify thy name.

D.C.T.

SMOKE DISPERSER.

A late number of the Journal of the Franklin Institute contains the following description of a contrivance of *M. Millet*, of Paris, which, if it really answers its purpose, will be of great importance in many situations, and no where more than at our University. When the season of smoke again arrives, we shall not fail to give it a trial. †

"A report made to the society for the encouragement of National industry, by M. Dersone, speaks favourably of the powers of this apparatus. It is simple, consisting of a kind of tub, pierced with a great number of holes having the burs outwards. It has been taken into practice by many persons. In order to prove its efficacy, one of them was fixed on the top of the funnel pipe of a stove, and a very close, smoky fire made below. By means of a ventilator, an artificial wind was then made to strike directly and powerfully on the smoke disperser for the purpose of driving the current downwards and making the stove smoke; but neither by this, nor even additional means, could any effect of the kind be produced. The committee could not explain the effect, except by supposing that the cylindrical form of the apparatus presenting only a small surface to the action of the wind was favourable, and that the form of the small apertures in this cylinder, occasioning a great number of contrary currents, produced almost a perfect neutralization of the force of the wind. Whatever may be the cause, the apparatus offers a cheap and effectual remedy for smoky chimneys, when this fault in them is dependent upon the pressure exerted by winds upon the upper aperture of theflue."

University Press—James Alexander, Printer.